

Cosmic Knowledge Assessment

Space And Astronomy · Practice Test · 20 Questions

1. Which element is the primary component of a main-sequence star's core fusion process?

- A) Helium
- B) Hydrogen
- C) Carbon
- D) Oxygen

2. What is the specific classification of the galaxy that contains our solar system?

- A) Elliptical
- B) Irregular
- C) Lenticular
- D) Barred Spiral

3. What is the name of the boundary surrounding a black hole beyond which nothing can escape?

- A) Singularity
- B) Event Horizon
- C) Accretion Disk
- D) Ergosphere

4. Which moon of Jupiter is recognized as the largest in the solar system, exceeding the size of Mercury?

- A) Europa
- B) Io
- C) Ganymede
- D) Callisto

5. What is the primary constituent of the atmosphere of Venus?

- A) Nitrogen
- B) Oxygen
- C) Carbon Dioxide
- D) Methane

6. Which physical constant defines the maximum speed at which all conventional matter and information can travel in the universe?

- A) The Planck Constant
- B) The Gravitational Constant
- C) The Speed of Light
- D) The Hubble Constant

7. What phenomenon is responsible for the observed redshift in light from distant galaxies?

- A) Gravitational Lensing
- B) The Expansion of the Universe
- C) Stellar Aberration
- D) Interstellar Dust Absorption

8. Which astronomical body is located at the center of the Oort Cloud?

- A) The Sun
- B) Jupiter
- C) Proxima Centauri
- D) The Galactic Core

9. What is the primary chemical composition of the core of a white dwarf star?

- A) Iron and Nickel
- B) Carbon and Oxygen
- C) Hydrogen and Helium
- D) Neon and Magnesium

10. Which telescope is currently orbiting at the second Lagrange point (L2)?

- A) Hubble Space Telescope
- B) Kepler Space Telescope
- C) James Webb Space Telescope
- D) Chandra X-ray Observatory

11. What is the approximate age of the universe according to the Lambda-CDM concordance model?

- A) 4.5 billion years
- B) 10.2 billion years
- C) 13.8 billion years
- D) 20.1 billion years

12. Which spectral class of stars is the hottest?

- A) M-class
- B) G-class
- C) A-class
- D) O-class

13. What describes the process of spaghettification occurring near a black hole?

- A) Thermal expansion
- B) Tidal forces
- C) Quantum tunneling
- D) Magnetic reconnection

14. Which planet in our solar system possesses the lowest average density?

- A) Saturn
- B) Neptune
- C) Uranus
- D) Jupiter

15. What is the term for a massive star that has exhausted its nuclear fuel and collapsed under its own gravity?

- A) Red Dwarf
- B) Brown Dwarf
- C) Neutron Star
- D) Protostar

16. What is the most abundant type of galaxy in the observable universe?

- A) Spiral
- B) Elliptical
- C) Irregular
- D) Ring

17. Which planet experiences the most extreme seasonal variations due to its axial tilt of 98 degrees?

- A) Mars
- B) Uranus
- C) Saturn
- D) Neptune

18. What cosmic radiation provides the strongest evidence for the Big Bang theory?

- A) Solar Wind
- B) Cosmic Microwave Background
- C) Gamma Ray Bursts
- D) Synchrotron Radiation

19. Which of these moons is known for having a subsurface liquid water ocean beneath an icy crust?

- A) Phobos
- B) Deimos
- C) Europa
- D) Titan

20. What defines the Chandrasekhar limit in stellar evolution?

- A) The maximum mass of a white dwarf
- B) The minimum mass of a black hole
- C) The radius of a pulsar
- D) The temperature of a supernova